Industrial CO2 Source Clusters in Scotland

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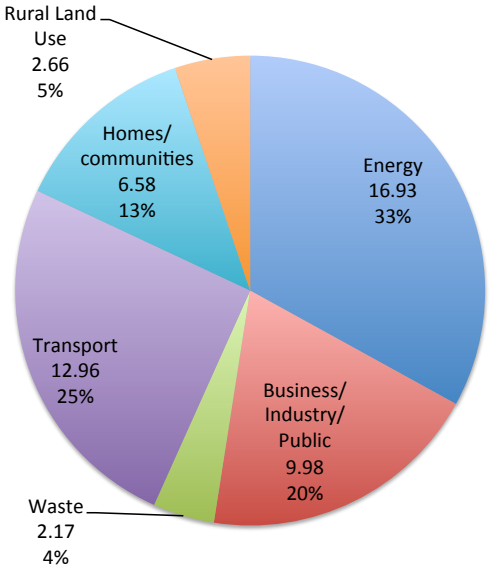
- 57% of Scottish emissions are from Energy and Industry
  - 29.1 Mt/yr from a total of 51.3 Mt/yr
- Statutory targets require overall reduction by 22.6 Mt/yr (-42.4%) by 2027
- This compares to IPCC figure of 34-40% reduction required from industry in EU to achieve 2DS scenario
- Scottish CO_2 emissions in 2011 from 91 emitters, total 22.4 Mt/yr
  - Data from SEPA's Scottish Pollutant Release Inventory
  - Threshold >10,000 t/yr

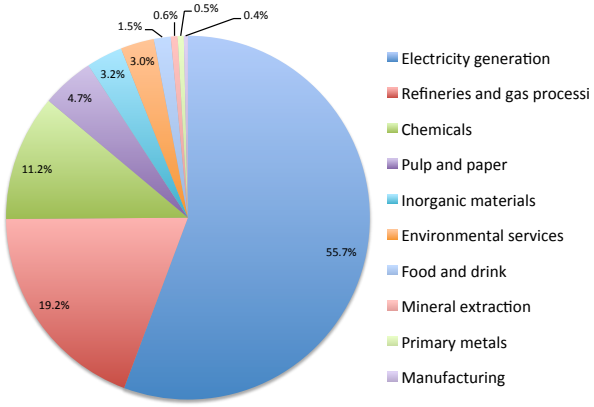
Scottish Emissions 2011, $MtCO_2e$



Scottish Government, 2013. *Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027. The Second Report on Proposals and Policies* http://www.scotland.gov.uk/Publications/2013/06/6387

- Power generation and industry account for more than half of Scotland's total CO_2 emissions

Scottish CO2 Emissions by Industry Sector, 2011



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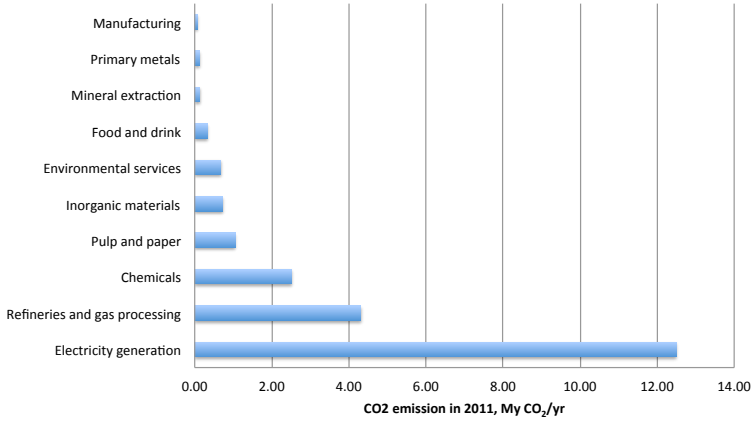
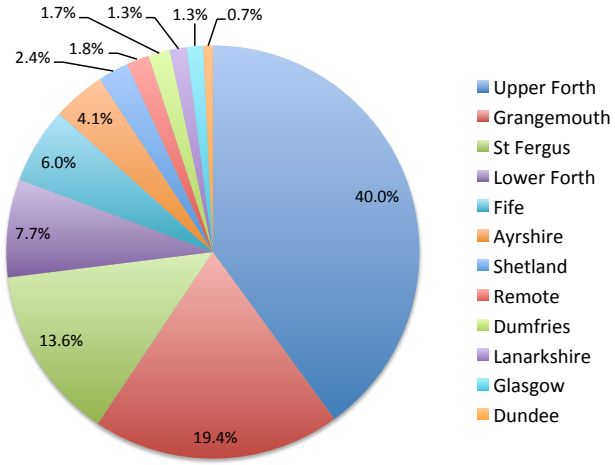


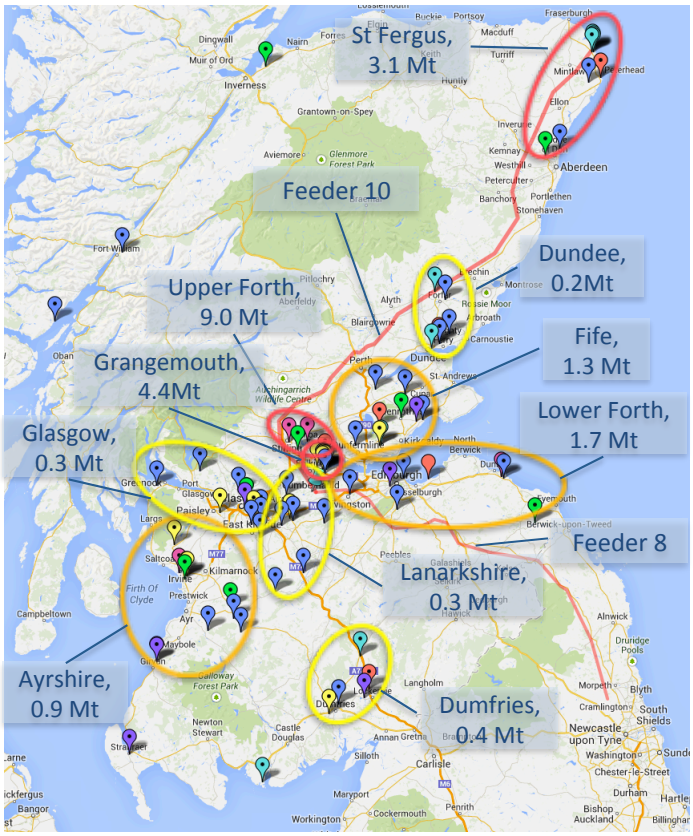
SEPA, 2013. http://www.sepa.org.uk/air/process_industry_regulation/pollutant_release_inventory.aspx

- National and international targets seek 40% emission reductions by 2030
- CCS from large industrial sources can play major role in achieving 2030 emission reduction targets

- Power and process industries in Scotland are generally clustered; 73% of emissions are within 10km of an available pipeline, 88% within 20km

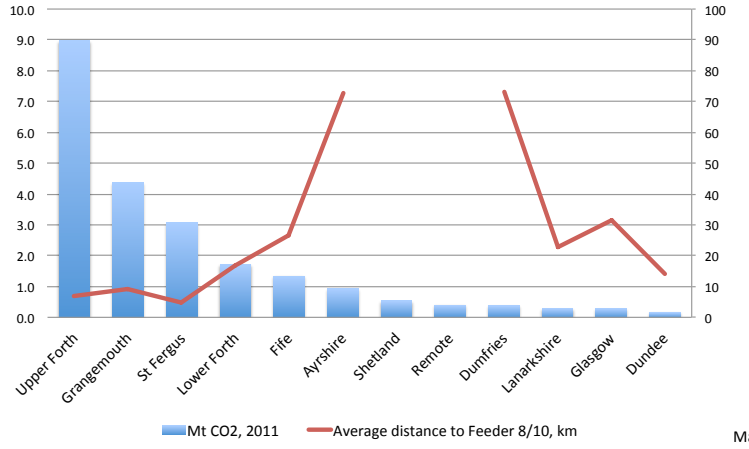
Share of Scottish CO2 Emissions by Cluster





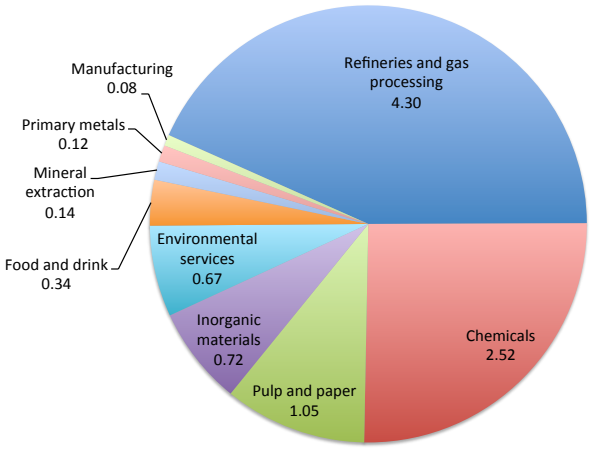
- Most onshore emissions in Scotland are in central belt
- Routes of Feeder 10 and 8 are close to many large emitters
  - Potentially available high pressure gas-grid pipelines

Scottish CO_2 Emission Clusters: size and distance to feeder



- Main clusters at Upper Forth, Grangemouth, St Fergus
- Account for 73% of emissions in 2011
- Located within 10km of Feeder 10

Industrial CO_2 emissions in Scotland (non power), 2011 Mt



- In Scotland we have
  - Refineries and gas separation
  - Chemicals
  - Pulp, paper and board
  - Cement and glass

- Refineries, gas processing, chemicals, pulp/paper/board and cement industries in Scotland all have significant emissions, each >0.5 Mt/yr